

# FARM AND DAIRY & RURAL HOME

Country  
44¢ Copy  
Dial 18  
Canadian Bldg



DEVOTED TO  
**BETTER FARMING**  
AND CANADIAN  
COUNTRY LIFE



Peterboro, Ont., Oct. 28, 1915



MUTUAL PRIDE: BOTH WINNERS AT THE RURAL SCHOOL FAIR.

ISSUED EACH WEEK

**Rural Publishing Co., Ltd., Publishers**

ONE DOLLAR A YEAR



## Experience is the Best Teacher

an old but yet a very true saying.

Many farmers have learned by BITTER experience that the cheap, low-grade Separator is a positive nuisance, and a direct lost, when not in proper running order.

Even at its best the poor machine does not "hold a patch" on the service that can be had from a high-grade Separator, like the "Simplex."

And then, too, the "Simplex" will outwear two, and perhaps, three or four of the poorer products.

To buy the BEST at the start (a Simplex) is surely money in your pocket.

We are also agents for the

### B-L-K Mechanical Milker and all Apparatus and Supplies for Dairies, Creameries and Cheese Factories.

If you want better dairy products and bigger profits, and are not now using either a "Simplex," a B-L-K or any of our other machines, we have literature and testimonials from satisfied users that will be of interest to you. A post card to us will get it for you.

## D. Derbyshire Co., Ltd.

Head Office and Works BROCKVILLE, ONT.  
Branches: PETERBOROUGH, ONT. MONTREAL and QUEBEC, P.Q.  
WE WANT AGENTS IN A FEW UNREPRESENTED DISTRICTS

## FOR THE FARMERS

Many Attractive Prizes for FARMERS ONLY

At the Sixth Annual  
**Toronto Fat Stock Show**  
Union Stock Yards  
Toronto

DECEMBER 10th and 11th, 1915

For Further Particulars and Premium List: write:

**C. F. TOPPING, Secretary**  
Union Stock Yards, TORONTO

When writing to advertisers mention Farm and Dairy.

## Cooperation and Dairying at Chilliwack, B.C.

Dairying, the District's Main Asset, but Cooperative Fruit Shipping is to be Developed.

THE farmers of Chilliwack, New Westminster Dist., B.C., are preparing to take care of this business in many ways. They are tilling greater areas of land and are cultivating their land much more intensively. They have already organized their marketing machine and have successfully operated it for two years.

Perhaps in no section of British Columbia has a more successful co-operative marketing organization been operated than in Chilliwack. Last year it did a business of \$200,000. This year its officers expect the turnover to be \$100,000. An increase in business of 25 per cent. is one which any concern might well be proud of in this troublesome year.

The "Chilliwack Producers' Exchange was organized two years ago with a capitalization of \$100,000, divided into 2,000 shares of \$50 each. Sixty per cent. of this amount was subscribed for by the farmers themselves who paid up 50 per cent. of their subscription. The remaining 40 per cent. was to be loaned by the Government, making a working capital of \$70,000. The Government, however, did not see its way clear to make the loan and so the exchange began business on the capital put up by the farmers. The Government loan is not needed, and perhaps the officials in Victoria looked into the future and saw this and did not advance the money. At the present time the majority of the stock is paid up, and those who have not paid up are making every effort to complete their allotments.

A problem that then confronted the farmers, after the preliminary organization had been completed, was to secure a place of business. The B.C. Electric Railway was approached and half of the fine large freight warehouse was secured. Here an office was installed and the exchange started business, with Mr. E. C. Eckert, one of the large land owners of the district, as manager.

### Buy and Sell Feed

Feed was bought and sold to the farmers at a commission of 10 per cent. This worked successfully, and then feeds and grains by the car were brought to Chilliwack for distribution. This part of the business has now reached large proportions.

The principal idea in organizing the exchange was to secure a central agency for the marketing of farm produce. This has been done and will become a greater factor in the development of this district than was at first anticipated, so well has the exchange looked after the farmers' interests.

Last year 70 cars of produce were shipped from the exchange to houses to points both east and west. But east is where every farmer in the community will tell you that he is going to sell more fruits and vegetables.

A commission of 10 per cent. is charged for selling produce, while if the farmer buys feed the same rate is charged on the purchasing price. Mr. E. C. Eckert has worked up a good connection in the east, having been alive to the opportunity that awaited the district upon the completion of the new ocean to ocean railway.

From many towns on the prairies orders are pouring in that cannot be filled because the exchange cannot secure the fruits and vegetables specified by the prairie dealers. Every mail brings more orders.

### Fruit East; Milk West

But with Chilliwack awakening to the business on the prairies she has

not forgotten her dairying industry, her greatest asset, nor will she, because the dairymen of the valley will always ship their milk here.

"Our fruit will go east and our milk will go west," say those who are in touch with the situation.

The Chilliwack Creamery is at present receiving 10 tons of milk per day, the majority of which is pasteurized and shipped to Vancouver. The morning's milking is gathered by the creamery's own wagons from the farmers and taken to the creamery where after being treated, is shipped to the city in the late afternoon and is delivered during the evening.

But little butter is made by this concern, which is also a cooperative company, because the managers say there is more money to be made by shipping milk to the city than by making butter.

"Vancouver people are too fond of New Zealand's product, and that's the reason for our loss of business," said Mr. W. K. McLeod of the creamery, this week. "We would be shipping more milk to your city, but some of the health inspectors down there have evidently taken it into their heads that they will lose their jobs unless they do some testing, and so they are finding all sorts of 'bugs' in our milk, which is curtailing the output somewhat, but at you can see there is little chance of any impure milk leaving this creamery." The farmers receive 32 cents per pound butter fat for their milk at the farm.

Those who follow the dairying industry are busy investigating the difference in the price that the farmers receive for the milk and that which the milkman in Vancouver charges his customers.

Four per cent. milk costs the farmer \$2.80 for 100 pounds of milk, which is equal to 12.8 cents per gallon. The price paid by the average citizen to the milkman in the city is 10 cents per quart, or 40 cents per gallon. If this amount 12.8 cents goes to the farmer, 0.2% to the transportation company, and the remainder where? That is what some of the farmers would like to know, because they think they should be paid a higher price for their milk when it is sold for 40 cents in the city.

The Chilliwack Creamery and the Chilliwack Producers' Exchange are cooperative concerns, owned and managed by the farmers, which are being run successfully and are excellent examples of cooperative methods amongst the farmers.

The future will see them flourish to a greater extent than they have in the past, and the management of the latter especially is alive to the necessity of catering to the prairie markets where thousands of dollars are awaiting the farmers who grow the fruits and vegetables to supply the demands. The exchange will make all that can be grown in the district, and will return the producer a good return on his investment.—W. L. McTaggart in The Daily Province, Vancouver.

The annual convention of the Ontario Horticultural Association will be held at the Parliament Buildings, Toronto, on Wednesday and Thursday, November 10th and 11th, for which an excellent program has been prepared. A number of experts along the line of civic improvement will be present, among them, Mr. T. Adams, the town planning expert, and Mr. Jno. Dunbar, of the Horticultural Department, Rochester, N.



We Welcome Producers  
Trade Increases the  
Vol. XXXIV

## Feeding The Details of

THE feeding of

before it is born. It is a very nice very scant feeding as a result weak feeders from birth are handicapped and are difficult to fatten for economy for any dairyman. A cow under such conditions is likely to affect unfavorably the calf as well as the cow. While the denials are perhaps not true, all milk production nevertheless a severe loss on her, and she should be liberally so as to produce a strong weak calf, and so that she will give good condition to give flow of milk.

Teaching the Calf

In nature the calf will itself it can supply. In modern dairy farming, however, the value of the whole milk forces the farmer to separate the calf from the cow soon after birth. Produced by the cow in the first few days (colostrum) properties which put digestive system in proper order. It is therefore necessary that the newly-born calf should have this milk. It is practice to let the calf suck for about 48 hours after birth, but if weak or undeveloped it may be weaned for suck for several days strength.

The longer a calf stays with the cow the harder to teach it to drink, but it is a simple matter to drink if taken when milked. Before this is done the calf is kept from the cow then be very hungry. mother's milk, fresh into a clean pail and which will sometimes drink and without coaxing, it will be necessary fingers and by this means into the milk. The calf should be moved carefully as soon



# FARM AND DAIRY

## & RURAL HOME



*Its Welcome Practical Progressive Ideas.*

**Trade increases the wealth and glory of a country; but its real strength and stamina are to be looked for among the cultivators of the land.—Lord Chatham.**

Vol. XXXIV

PETERBORO, ONT., OCTOBER 28, 1915

No. 43

## Feeding and Care of Dairy Calves

### The Details of a System Advocated by United States Department of Agriculture.

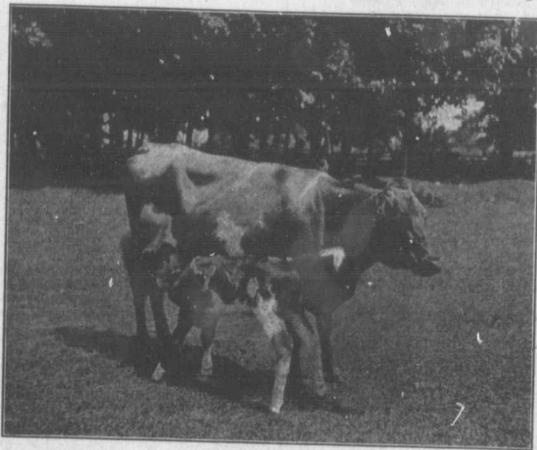
**T**HE feeding of the dairy calf should begin before it is born. Too many dairymen practice very scant feeding of pregnant dry cows, and as a result weak, puny calves are dropped which from birth are handicapped in their development and are difficult to feed and care for. It is false economy for any dairymen to withhold feed from a cow under such circumstances, as this is likely to affect unfavorably the future welfare of the calf as well as later milk production by the cow. While the demands upon the cow at this time are perhaps not quite so great as when in full milk production, there is nevertheless a severe strain upon her, and she should be fed liberally so as to be able to produce a strong well-developed calf, and so that she may be in good condition to give a large flow of milk.

#### Teaching the Calf to Drink

In nature the calf sucks the cow until it can support itself. In modern dairy farming, however, the value of butterfat and whole milk forces the dairymen to separate the calf from the cow soon after birth. The milk produced by the cow for the first few days (colostrum) has properties which put the calf's digestive system in good working order. It is therefore necessary that the newly-born calf have this milk. It is a good practice to let the calf suck the cow for about 48 hours after birth, but if weak and poorly developed it may be well to let it suck for several days to gain strength.

The longer a calf remains with the cow the harder it is to teach it to drink, but it is usually a simple matter to teach a good robust calf to drink if taken when not more than two days old. Before this is attempted the calf should be kept from the cow for about 12 hours; it will then be very hungry. About two quarts of its mother's milk, fresh and warm, should be put into a clean pail and held in front of the calf, which will sometimes put its nose into the pail and drink without coaxing. In most cases, however, it will be necessary to let the calf suck the fingers and by this means gradually draw its nose into the milk. The fingers should be removed carefully as soon as the calf gets a taste

of the milk. It will oftentimes take its nose out of the milk in a few seconds, and if so, the operation will have to be repeated. Patience is necessary. Usually after the second or third feeding the calf will drink alone. Occasionally a calf is stubborn and its nose has to be forced into the pail; in such cases it should be straddled and backed into a corner. The nose is then grasped with one hand, two fingers being placed in the mouth and the nose forced into the milk, when the calf, by sucking the fingers, will draw the milk up into its mouth. The fingers should



**By Mutual Understanding: Nature's Way Is the Simplest System of Calf Rearing Known.**

be gradually removed and this operation repeated until the calf will drink alone.

#### Time of Feeding and Quantity

When a calf is young it is best to feed it three times a day, as nearly eight hours apart as possible; but many successful feeders feed only twice a day. The calf must be fed regularly and in equal quantities. It is impossible to give a rule which will apply to all cases, for some calves have greater appetites than others, grow faster, and therefore should have more milk. The working capacity of the stomach of the calf is small, and during the first few weeks more troubles are

caused by feeding too much milk than by feeding too little. As a rough guide to the inexperienced feeder the following is suggested:

**First week.** Feed a 60-pound calf four quarts a day of its mother's milk, warm from the cow.

**Second week.** If no digestive troubles appear and the calf is thrifty, increase the feed to five or six quarts of whole milk a day. This does not need to be its mother's milk.

**Third week.** Feed as for second week, except that one quart of skim milk is substituted for one quart of the whole milk.

**Fourth week.** Same as third week, except that one-half of the milk should be skim milk and one-half whole milk.

When the calf is one month old it may receive all skim milk provided it is thrifty. The amounts can be increased gradually until it is three months of age, when it should be taking 8 to 10 quarts a day.

The foregoing rule for feeding applies only to a calf weighing about 60 pounds at birth. It may be varied according to weight and the vigor of the calf. Experience will soon teach the feeder how to vary the amounts. Larger calves will need a little more milk. When skim milk is used instead of whole milk some feeders attempt to feed more of it, because they think that the extra amount given will compensate for the loss of fat. This is entirely wrong. No more skim milk should be fed than if whole milk were used, but the fat removed from the milk should be replaced by grain, as pointed out in another paragraph.

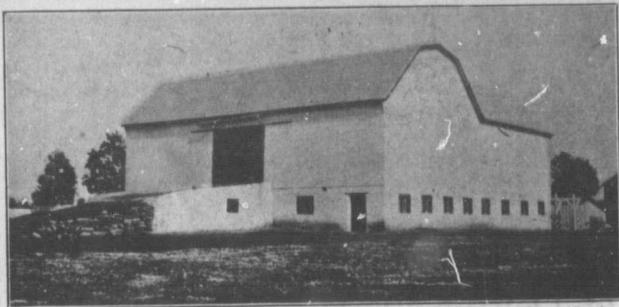
#### Heating Milk For Calves

While the calves are young the milk should be heated to blood heat (90 degrees to 100 degrees F.). When two or three months of age calves will do well on cold milk, provided it is of the same temperature, or practically so, at each feeding. The important thing is that the milk be of the same temperature at each feeding. Dirty or old milk should not be given.

#### Grain to Feed With Milk

A little grain should be fed as soon as skim milk feeding begins, in order to replace the butter fat removed in the cream. Two parts, by weight, of cracked corn and one of wheat bran make a good grain mixture which every farmer can readily secure and requires no special preparation. The calf should be taught to eat this grain, by sprinkling a little of it in the feed box right after feeding the milk. No more grain should be fed than the calf will clean up readily.

The calf should be supplied with plenty of



**A New Barn That Owes Much of Its Attractiveness to Whitewash and Green Paint.**

This is an exterior view of the new barn erected by W. H. Snowden, Peterboro Co., Ont., an interior view of which was shown in Farm and Dairy some weeks ago. The body of the building is covered with white rock wash which is superior to whitewash in appearance and lasting qualities. The trimmings are green. —Photo by an editor of Farm and Dairy.

roughage, preferably clover, alfalfa or pea-vine hay; but if these are not available, mixed dry bright corn fodder, or shucks may be used. This roughage should be kept before the calves in a rack or box where it can be kept clean and fresh by renewing each day. The calf, when it is a week old, will begin to pick at this, and at one month of age will be taking a considerable amount. As in feeding grain, cleanliness is of great importance.

The calf will do well on pasture, and if this can be provided convenient to the buildings he will be able to get the greatest part of his roughage in this way.

Cleanliness is one of the most important factors in feeding young calves. Clean feeding pails, troughs, and stalls are safeguards against digestive troubles. Milk should be fed only in clean pails, which should be washed and scalded after each feeding. All feed boxes should be kept clean. Special care should be taken to prevent meal from fermenting in the corners of boxes. Fermented or mouldy feed will often upset the digestive system of a calf and endanger its life. No more grain should be fed than will be cleaned up in a few minutes. The bedding in calf stalls becomes very quick. The calf should by all means be kept dry, and it is therefore necessary to keep the stalls well bedded at all times.

#### Scours in Calves

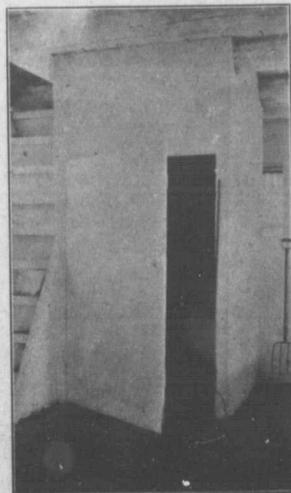
The principal difficulty in raising calves is scours. This trouble is usually due to mistakes in feeding—dirty milk, dirty pails, sour milk, fermented grain, irregular feeding, overfeeding; almost any mistake in feeding is liable to bring about this trouble. The first thing to be done in such cases is to reduce the feed about one-half and see that it is fresh and clean in every respect. Oftentimes this will be all that is necessary, and then the calf can be gradually brought back to full feed. If the trouble is serious and persistent, give the calf two or four tablespoonfuls of castor oil in milk as a physic, and two to three times daily a mixture of one part salol and two parts subnitrate of bismuth in doses of one to two teaspoonfuls, depending upon the severity of the case and the size of the calf. If scours is general and persistent, it will be well also to disinfect the calf stalls with compound solution of cresol, or some other good disinfectant.

If calves begin to scour in one or two days after birth and the discharge is white, acute contagious scouring is probably the trouble and will require the most thorough scouring and the prompt services of a competent veterinarian.—Dairy Division, Bureau of Animal Industry, U. S. Department of Agriculture.

#### Ice House Construction

A. C. L., Perth Co., Ont.

**WE** have just hauled a nice supply of dry sawdust for the ice house this winter. Of course, there is no ice on the pond yet, but there is nothing like being ready in time, and



#### A Fine Point in Clean Milk Production.

The more dust there is floating in the atmosphere of the stable, the more difficult it is to produce milk suitable for a city retail trade. R. J. Waller, in his new stable, has gotten around one part of the dust difficulty by closing in the hay chutes at small points, but one worthy of emulation in dairy stables.

—Photo by an Editor of Farm and Dairy.

the kind of sawdust I want could not be got next February. We have just finished up the last of our ice, a little earlier than I like to, and while preparing my own ice house for refilling, I would like to ask how many dairy farmers have ice houses at all. I have had two, and both satisfactory. The first cost nothing; that is, no money outlay. The second cost \$150 for materials, plus a lot of our own labor. It is a solid concrete building, with a milk house in connection. But my first house, which did service for a great many years, will probably be of more general interest.

The plan for this first house was not original with me. I got the general idea in the Family Herald many years ago. I selected a well-drained site, situated on a side hill, so that I could run a gangway from the hilltop to the gable door of the ice house and run all the ice in on the level. This reduced the labor of filling the house considerably. Then I planted corner posts 14 feet long on the four corners of the rectangle, 14 1/2 feet, leaving 10 feet of the posts above the soil. On either side I planted two additional posts at regular intervals. The square was then boarded up with rough lumber that was lying around on both sides of the posts, and the space between filled with sawdust, leaving room for a continuous door on one side. The roof was made A shaped and covered with a cheap brand of roofing paper. This, too, had been left over from another job. Drainage from the bottom was ensured by making the floor of round poles, through which waste water could trickle. In filling, I put 15 inches of sawdust on the floor and left 12 inches space around the edge to be packed with sawdust. Then I finished off with almost two feet of sawdust on top and small gable windows at either end, giving ventilation over the top.

In filling an ice house, I always lay the first blocks flat, the next layer on edge, next flat, and so on until the house is full. After each layer is laid in, water is poured over to fill the cracks between the blocks, and it will freeze there. In taking out, I never take blocks out of the second layer until all of the first layer has been removed, and at all times I make sure that there is lots of sawdust over the ice.

All of the material in this old ice house came from lumber that was lying around the farm, and most farms I know have a supply of this character. Our new ice house was built when our dairy herd increased and we needed more room. I find a good general rule is one ton of ice to each dairy cow. Ten blocks of ice two feet square and 12 inches thick, approximate one ton.

#### Good Production from Large Dairy

Andrew Henderson, Leeds Co., Ont.

**I** AM writing a short account of what my herd of 38 Ayrshires and Ayrshire grade cows made me for the year 1914. Including milk sent to the factory, cream shipped, and butter made, but not counting the milk used for the family, which was from three to five quarts daily, besides an additional family for six months, also supplying a large camp ground with from 100 to 150 lbs. of milk a day for eight days, and an occasional quart or two to a couple of other families residing nearby, besides quite a lot fed to young calves, the net amount of money taken in was \$2,953.74 for the year, or an average of \$77.73 a cow.

This herd is composed of 25 cows, five three-year-old heifers, 4 two-year-olds and one farrow cow.

Their feed ration, after going on grass, consisted of one quart ground oats, bran, oilcake meal and gluten feed mixed twice a day, night and morning, till they were stabled in the fall.

How does this compare with some of my neighbors' herds? I would like to hear from them.

The outcome of crossing can never be depended upon and the second generation will be more unsatisfactory than the first. The dairy farmer who selects good animals from the breed which best suits his tastes and locality, and not only selects good individuals, but selects those which will transmit their strong characters, then stays with that breed and continues to grow better individuals by incessantly weeding out the poorer ones will meet success in due measure of financial returns and in that joy of achievement gained from work well done.—W. J. McC.

#### Milk Accounts

**R**AYHAM farmer whose homes are can do it conveniently from a day's way of the "Forge" pose of viewing the to the farmer very view of the crops, ar what it means in this field of grain is a hold; there is no such keen appreciation a farmer, and—it is can see such crops Road, where what st up to the forty and acre standard. Forgr putation all its own.

On the 15th of July along the Forge were even topped, thick, of yellow shading a ripe, for what has s this his showery sea came into view we the best we've seen we thought of them trying to name the e

We were going to Elliott, who isn't a g man famous in a first farming, who sometimes milk cheese. We turn off the Forge to the old North Bayham the Elliott buildings brick chimney." An houses and barns o Elliott, father and so

#### School Training

I discovered later its own place in the whom we presently di field by the road-side through the 150-acre pearance of Mr. Ell Somewhat one always with years, I had be O.A.C., but I could from the systematic an impromptu descri of his business. Wh else the schools give o to give, a mental tra in system is, always ed. Young Mr. Elliott ping down from his vator, and coming th his corn to meet us, an account off-hand of crop rotation, his fee system, his labor-s devices, his expenses, dividends, etc., as rap readily, concise as a clerk tabulates the bil a sheaf of money.

"I scarcely know to tell you. You know just general farm

"A. E. Paragon is the name of an editorial in the St. Thomas Jour a secretary of his visit to the farms of James and George. He is so good that we see it in full herewith. and Dairy numbers the note among "Our Folla.

# An Elgin Farm with a \$6,000 Income\*

Milk Accounts for \$4,000 of the Total. A Visit with Messrs. John and George Elliott, Elgin Co., Ont.—By A. S. Paraguo.

**R**AYHAM farmers, at least those whose homes are situated so they can do it conveniently, often return home from a day at Tillsonburg by way of the "Forge" Road, for the purpose of viewing the scenery. Scenery to the farmer very often means a good view of the crops, and that is precisely what it means in this instance. A fine field of grain is a good thing to behold; there is no one with eyes of such keen appreciation for the sight as a farmer, and—it is not everywhere he can see such crops as on the Forge Road, where wheat still sometimes goes up to the forty and fifty bushel-to-the-acre standard. Forge Road has a reputation all its own in East Elgin.

On the 16th of July the wheat fields along the Forge were beautiful, level, even topped, thick, upstanding masses of yellow shading a trifle to the brown of dead ripe, for wheat has had to wait patiently on this shivery season. Of each field as it came into view we would exclaim: "Oh, this is the best we've seen yet;" only afterwards when we thought of them all in the lump, we gave up trying to name the exactly best.

We were going to visit the farm of Mr. George Elliott, who isn't a great author this time, but a man famous in a first-class way for "all-around" farming, who sometimes takes in a \$500 monthly milk cheque. We were told we would have to turn off the Forge to get there. "You know where the old North Bayham cheese factory is? Well, the Elliott buildings appear just behind its tall brick chimney." And there we found them, the houses and barns of Messrs. James and George Elliott, father and son.

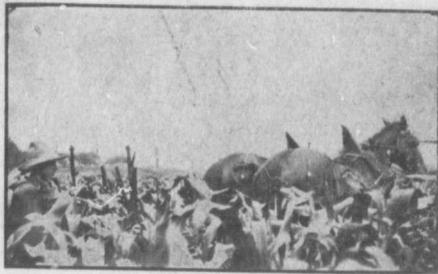
## School Training Gives a R-ady System

I discovered later that that cheese factory had its own place in the story of Mr. George Elliott, whom we presently discovered cultivating corn in a field by the roadside, for the road runs directly through the 250-acre farm. The youthful appearance of Mr. Elliott rather surprised me. Somehow one always associates a large business with years. I had been told he had attended the O.A.C., but I could have derived this at once from the systematic method he adopted to give

an impromptu description of his business. Whatever else the schools give or fail to give, a mental training in this system is, always gained. Young Mr. Elliott stepping down from his cultivating, and coming through his corn to meet us, gave an account off-hand of his crop rotation, his feeding system, his labor-saving devices, his expenses, his dividends, etc., as rapidly, readily, concise as a bank clerk tabulates the bills in a sheaf of money.

"I scarcely know what to tell you. You know we are just general farmers."

\*A. S. Paraguo is the pen name of an editorial writer in the St. Thomas Journal. His account of his visit to the farm of James and George Elliott is so good that we reproduce it in full herewith. Former Dairy numbers the Elliotts among "Our Folks."



Mr. Geo. Elliott is Worker as Well as Manager. He May Be Seen Here Cultivating a Portion of His 30-Acre Corn Field.

he began, for he is a modest man.

I assured him many people were general farmers, and liked to know about a successful man of their variety. "You know what you like to hear about other farmers and their work," I suggested. Mr. Elliott smiled and went to work. Looking about on his corn, he said:

"Well, we have a four-crop rotation. One year we plow under sod and plant about 30 acres of corn and 20 of wheat. The next year this land is largely put back into oats and seeded down. We seed for feeding purposes, of course, and we use a mixture of seven pounds red clover, two pounds alfalfa, four of timothy, and sometimes a little alsike. The third year this is cut for hay and the fourth pasture. We aim to have all our land fertilized once in the four years at least, and can do this easily enough with the stock we carry. At present we have six acres of alfalfa. It is our second year for cutting, and we expect three cuttings. Now, after the first, it is six or eight inches high. We also raise some roots for feed."

## Mr. Elliott's System of Feeding

"Your aim is to feed on the place all the land raises, I suppose?"

"Everything but the wheat. Of course," he added, with a smile, "at last winter's prices we sell the wheat. No, we do not have to buy much

feed, only oil cake, bran, etc. We have three silos, one of them 16x34, the two others 14x34. We plan to feed corn ten or eleven months of the year. From the 24th of May to the first of June the cattle are put on pasture. Ensilage is again being fed by the first of July.

"In the winter we feed 40 pounds of ensilage per cow a day, with a mixture of oil cake, oat chop, and bran. Last year bran was dear and we used cotton seed meal instead. I know this is generally considered a dangerous food. But we discovered a method by which we used it all last winter, and had not a single sick cow as a consequence. We found that by feeding it in the proportions of one-half oil cake and one-half cotton seed, along with oat chop, we had a perfectly safe ration. The clover and alfalfa, with the roots, complete the diet list for our cattle."

"I must add that we have been accustomed to weighing our milk for years and that we feed in proportion to the milk given, that is, one pound of chop to every four or five pounds of milk."

## How Labor is Saved

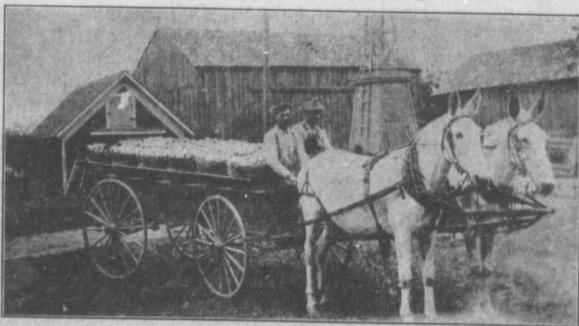
"Then there is the labor question, of such great importance these days. We partly solve the problem by having a tenant house. That arrangement is more satisfactory all around. For the rest we make horses and machinery do what they can. We have six horses, and use four on the plow, discs, etc. We have a two-row corn cultivator, hay loader and side delivery rake. They all save us labor. Then, too, we have what we call a car on our hay racks. By using it and keeping two teams and wagons going, a man and a boy can load in the field as fast as these loads can be put in the barn. We drew in eleven loads after two o'clock one afternoon and quit early, too, for milking."

The advantage of such planning is obvious, especially with the uncertain weather of this season. From Mr. Elliott's description, I scarcely knew what the car on the hay rack would look like. Probably many have seen or used them, but I had not observed them before. On our way home one appeared on the road in front of us. It is on a track, and at first is placed at the back of the rack. The loader runs this car full from behind; it is then run forward, occupying half the length of the whole rack. The latter half is then filled by the loader, requiring little or no personal handling of the hay.

Messrs. Elliott have installed a milking machine also, which seems to be giving good satisfaction so far. "We used to need four or five milkers," commented Mr. Elliott. "Now two of us can do the work in about the same time."

"It is part of our plan, too," continued Mr. Elliott, "to have fresh milch cows in the autumn and winter. This makes the heaviest part of our work with the cows, and the feeding of

(Concluded on page 6)



Why Has the Mule Never Become More Popular on Canadian Farms.

Needless to say, this is not a Canadian scene. The illustration shows a Michigan farmer drawing a pair of white mules. These animals are said to possess wonderful endurance, are easily kept, but are rather slow walkers, and their braying is most objectionable. They have been used somewhat extensively in Canadian lumber shanties but seldom on Canadian farms.

## Don't Waste Your Ensilage. Get the "EMPIRE" SILO ROOF

It's a Money-Saving Improvement—Cost is Low

Weather-tight  
Fire-Proof  
Durable  
Strong  
Simple



Big Opening  
For Filling  
Lois of Light  
and Ventilation  
Low Priced

We say the "EMPIRE" SILO ROOF is perfect and we're prepared to back that up. Write to-day for prices and full information.

Also Ask for Prices on "Eastlake" Galvanized Shingles, Brick and Rock-Face Siding, Ventilators, Barn Roof Lights, "Empire" Corrugated Iron and Art Interior Metal Plates.

**Metallic Roofing Co., Limited**  
Manufacturers - - - Toronto

### OUR ADVERTISERS ARE GUARANTEED

Every advertiser in our columns is guaranteed to be strictly reliable. Should you be dissatisfied with any dealings with our advertisers we will consider it a favor if you will advise us. Remember that we will stand your loss, provided of course you mention Farm and Dairy at first writing.

## SYDNEY BASIC SLAG

If you have any old pastures or poor meadows we want you to give them a dressing of Sydney Basic Slag this Fall. In districts where our product has not hitherto been sold

### We Will Supply One Ton Free Of Charge

to a limited number of farmers for trial purposes. The cheapest advertising we can get is satisfied users. We would not make this offer unless we were certain the introduction of Basic Slag into your district would lead to a big consumption.

**THE CROSS FERTILIZER CO. Ltd.**  
SYDNEY, NOVA SCOTIA

### Distribution of Seed Grain and Potatoes

BY instructions of the Hon. Minister of Agriculture a free distribution of superior sorts of grain and potatoes will be made during the coming winter and spring to Canadian farmers. The samples will consist of spring wheat (about 5 lbs.), white oats (about 4 lbs.), barley (about 5 lbs.), and field peas (about 5 lbs.). These will be sent out from Ottawa.

A distribution of potatoes (in 3 lb. samples) will be carried on from several of the Experimental Farms of the Central Farm at Ottawa supplying only the provinces of Ontario and Quebec.

Each application must be separate and must be signed by the applicant. Only one sample of grain and one of potatoes can be sent to each farm. If both samples are asked for in the same letter only one will be sent. Applications on any kind of printed form cannot be accepted.

The destruction by fire of the cereal building at Ottawa, which contained grain-cleaning machinery, has necessitated the distribution to a certain extent. We shall fill as many as possible of the applications which conform to the rules; but requests received after the end of December will probably be too late. Samples cannot be sent in response to applications (no matter when received) which fall to state clearly the needs of the applicant, his experience in crop-raising, and the character of the soil on which he intends to sow the seed.

All applications for grain (and applications from the provinces of Ontario and Quebec for potatoes) should be addressed to the Dominion Cereal and Central Experimental Farm, Ottawa. Such applications require no postage. If otherwise addressed, delay and disappointment may occur. Applications in any other province should be addressed (postage prepaid) to the Superintendent of the nearest branch Experimental Farm in that province.—J. H. Grisdale, Director, Dominion Experimental Farms.

### An Elgin Farm With a \$6,000 Income

(Continued from page 5)

the better calves, of which we usually raise from nine to twelve, come in the winter, giving steady work then to the hired help. In the fall when the rushing work of silo filling is on, our cows will be dry."

#### Profits and Expenses

"I understand you keep grades?" I remarked.

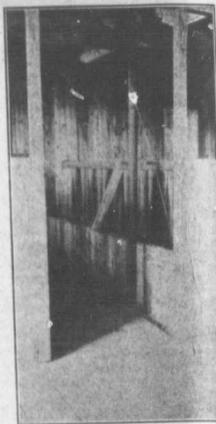
"Well, yes, although we are steadily working into pure-breds. For the last 20 years we have been particular about the breeding of our grades. We have now some good grades, we think, but about half our cattle are pure-breds."

"Do you think pure-breds yield more milk than a high class of grades?" I asked.

"A good herd should. Not every one has the talent for raising pure-breds. Poor pure-breds are not nearly as good as good grades. Never higher in the dairying business, and for myself, my taste runs rather to cattle than horses and other stock. Our cows at present average 9,800 pounds a year."

I asked him about the profits of his business and he replied:

"In 1913 we took \$4,400 in cheques from the Tillsonburg condenser. In 1914, a drier season, we received \$4,000. Last year we sold \$6,000 worth of stuff off the farm.



A Corner of the Calf Barn.

Calves are best tied up when drinking. The illustration shows the tie-ups in the calf pens at Springburn Stock Farm, Huntingdon Co., Que.

The \$4,000, of course, from the milk. \$700 from wheat, the remainder from hogs, veal calves, cattle which we sold, a horse, etc. We run out about \$300 yearly for feed, oil, cake, bran, cotton seed and the like."

I am sorry it did not occur to me to ask his average expense for hired labor and machinery.

#### His First Lesson in Dairying

I took a picture of Mr. Elliott and his team in his fine corn field which was by far the best field we noticed in our travels up to date. The tall chimney of the deserted old cheese factory rose up before us on one side of the sea of rippling green leaves. "Yes," remarked Mr. Elliott, in answer to a question, "my father owned and operated that factory for 15 years. And it was in that factory I got my first pointers on dairying. I began to see how some farmers sell in so much more milk than others. Milk drawers saw the same thing and began to refuse to accept any but the hundred weights they drew, but I demanded pay by the route. I began to investigate the cause of the differences in milk produced on different farms."

#### Farm Drudgery Taken Away

"I should like to know what you do if any, you attribute to your cows at the O.A.C. Mr. Elliott?" I wanted to know.

Mr. Elliott smiled again. "As we can learn to be a good farmer without going to the college," he said. "There are many good farmers who learn by observing. Then, every ledge did for me was to take away the drudgery of farming. I knew before that corn ground had to be cultivated — but now I know why and just how the moisture is conserved by capillary action, etc. I just learned because I know the 'why' things, or am interested in discovering it. I suppose my interest in agriculture is increased. I believe I am more adaptable to new methods, and I pick up the new things more readily and quickly. It has taken away the drudgery and given enjoyment: that is the main thing, however."

Our visit left me with the impression that if our agricultural schools do no more than that they are doing a great deal.



### Barred Rock

THE Fourth Laying Competition under the supervision of the Department of Agriculture, was concluded on the 28th inst. when pens competing in non-weight varieties were represented, which were greatly and secured. The first pen of Anconas, and Campines. There were 10 pens of each, and the White Leghorns, of Estridge, Duncan, eggs to their credit. The next four pens L. M. Ross, Cowick, North Bros., Covick, Kaskalah Park Kung, eggs and H. A. H. Sta., 1,121 eggs.

In the class for the following breeds were: Barrons, Whites, Rhode Island Reds, Oringtons and W. The winning pen, owned by G. Gibb, had 1,342 eggs, exceeding the best pen horns by the small egg. The next four were: White Wyandottes, 1,212 eggs; Victoria, 1,232 eggs; doties, E. D. Road, 1,108 eggs; R. N. Clerke, 1,108 eggs; W. J. Grudfenden, W. eggs.

### Three Aids to E

THE poultryman have a profitable season just three things NOW.

First, he must make his house ready for the winter weather tight, repairs done if need be; that thoroughly and eit



Patented 1914  
Price \$58.00 F.O.B.  
New on the market after having been thoroughly tested by leading Farming Authorities. A most efficient machine is needed. Work cost only 7 to 10¢ per foot. Write for testimonials.  
Canadian Drill & Chuck Co.  
1807, SPADINA AVENUE

GILSON PATENT  
MACHINERY  
INCORPORATED  
Manufacturers of  
Machinery  
100, York St.,  
Toronto, Ont.

**Steel**  
for Bridges and  
Cut any I  
JNO. J. GART  
8 Front Street, West



**Barred Rocks Win**

**T**HE Fourth International Egg Laying Competition under supervision of the Provincial Department of Agriculture, Victoria, B.C., was concluded on Oct. 9. Nineteen pens competed in the class of non-weight varieties. Three breeds were represented. White Leghorns, which were greatly in the majority, and secured the first 11 places, one pen of Anconas and one Silver Campines. There were six birds in each pen, and the leading pen of White Leghorns, owned by E. W. Estridge, Duncan, B.C., had 1,341 eggs to their credit in the 12 months. The next four pens were as follows: L. M. Ross, Cowichan, 1,242 eggs; Norie Bros., Cowichan, 1,228 eggs; Koksilah Park Farms, Cowichan, 1,202 eggs and H. A. Hinks, Langford Stn., 1,121 eggs.

In the class for weight varieties the following breeds were represented: Barred Rocks, White Wyandottes, Rhode Island Reds, S. C. Reds, Buff Orpingtons and White Orpingtons. The winning pen, Barred Rocks, owned by G. Gibbard, Mission City, had 1,343 eggs to their credit, thus excelling the best pen of White Leghorns by the small margin of one egg. The next four in order of merit were: White Wyandottes, C. Adams, Victoria, 1,319 eggs; White Wyandottes, E. R. D. Read, Duncan, 1,180 eggs; R. N. Clerke, West Vernon, R. C. Reds, 1,156 eggs; Buff Wyandottes, I. C. Crutenden, Westminster, 1,112 eggs.

**Three Aids to Big Egg Yield**

**T**HE poultryman who wishes to have a profitable laying flock for the season just ahead, must do three things NOW.

First, he must make his poultry house ready for the laying flock. This means that he must make it perfectly weather tight, repairing roof and windows if need be; that he must clean it thoroughly and either whitewash it

or spray it with kerosene and zenoleum or kresol; that he must thoroughly renovate roosts and nests; he must refill the loft with clean straw; provide new sand and litter, hoppers for dry mash, for grit, shells, and charcoal, a table or shelf for pans or crocks for water and milk, and a cheese box of road dust or hard coal ashes.

He must determine the capacity of his house in order that the laying flock may not be crowded. Each laying hen needs at least four square feet of floor space. If an enclosed scratching shed is included, this may be considered in making calculations of the amount of floor space. If a considerable number of old fowls are kept over, it will be worth while to divide the poultry house proportionately between old and young.

He must gather in all the young chickens from brooder houses, coops, boxes, trees, and bushes, for a thorough culling of the flock. He must give pullers, hatched in April and May, a chance to make good. They will lay in November and December if properly housed and fed. He must dispose of all old stock, except birds desired as breeders; also old roosters and cockerels, excepting those unneeded as breeders or for family consumption. Colony houses may be utilized for cockerels and surplus stock until they can be profitably marketed.

Two bulletins of importance have recently been issued by the Health of Animals Branch of the Federal Department of Agriculture at Ottawa. Both are of particular interest to poultrymen. One, by Dr. Chas. H. Higinis, deals with Blackhead in turkeys, and the second, edited by Dr. Higinis, with the assistance of A. B. Wickham, has for its subject "Avian Tuberculosis." Both of these bulletins can be had free.

**Coming Events**

- Ontario Plowmen's Association, G.A.C., Guelph, Nov. 5, 1915.
- Provincial Winter Fair, Guelph, Dec. 6.
- Ontario Horticultural Association, Tenth Annual Convention, Nov. 10-11.
- Ontario Vegetable Growers' Convention, Nov. 9.
- Toronto Fat Stock Show, Union Stock Yards, Toronto, Dec. 10-11.
- Ontario Beekeepers' Convention, Toronto, Nov. 23-25.
- Alberta Winter Fair, Dec. 14-17.

**MORE MILK & BUTTER**

**Has No Equal as a Butter and Milk Producer**

Milk Cows need food rich in nitrogen for two reasons: to rebuild the ordinary waste of tissue and to secure the protein necessary for the milk. This is why nothing can equal **Maple Leaf Oil Cake** as a producer of butter and milk. It increases the flow of the milk and adds to the richness of the cream. Made by the old process and guaranteed absolutely pure. Contains over 3% Protein and 33% Carbo-Hydrates.

This splendid food is so rich in protein that British Farmers send four thousand miles to secure it.

Write to-day for samples and our Free Booklet "Facts to Feeders."



**CANADA LINSEED OIL MILLS, LIMITED**  
TORONTO-MONTREAL



**Grinding at Less Than a Half Cent Per Bushel**

and at the rate of 50 bushels per hour with our Special Toronto Grinding Outfits

**T**HIS is not a special record, but an every day performance. Many of our customers who have these outfits grind a bushel a minute at a cost of much less than a half cent when the condition of the grain is right.

**YOUR DAMAGED WHEAT AS GOOD FOR STOCK FEEDING AS DOLLAR WHEAT**

If your grain has sprouted or been affected by frost or smut, don't throw it on the market for whatever price you can get. GRIND IT. FEED IT. Even damaged wheat has high nutritive value, and when well ground and mixed with peas, oats or corn it is as good a stock food as the highest price grain.



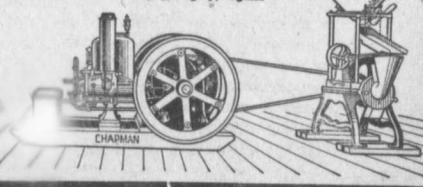
**TORONTO ECONOMY GRINDING OUTFITS**

Are used by prosperous farmers because they cut down their feed costs. They save time, labor, wages, and the money paid to custom grinders.

**SPECIAL FEATURES OF "TORONTO" GRINDERS**

They are built with heavy, solid, compact frames, heavy strong arms supporting the outer bearings. Main shaft 1 1/2 in. cold rolled steel supported by three long bearings. The plate adjustment is controlled by a lever above the frame, away from the belt. The grain can be regulated and sent for particulars and prices of the different sizes.

**Ontario Wind Engine & Pump Co., Limited**  
Head Office: TORONTO.  
Branches: Montreal, Winnipeg, Calgary, Regina.



**THIS IS THE DAWSON DITCH DIGGER**  
Patented 1914  
Price \$38.00 F.O.B. Toronto  
New on the market after having been tested thoroughly by leading Farmers and demonstrated by the Department of Agriculture and Drainage Authorities. A most efficient worker wherever it is needed. Work cost only 7c to \$1.50 per Hundred feet. Write for testimonials and particulars.  
**Canadian Drill & Chuck Company, Ltd.**  
180 F. SPADINA AVENUE, TORONTO



**GILSON THIS GASOLINE ENGINE \$47.50**  
Lightweight, compact, strong, large, generous capacity. Perfectly adapted for all farm and household purposes. Simple, easy to operate. Write for particulars.  
67 YORK ST. TORONTO, CAN.

**Steel Rails**  
for Bridges and Reinforcement  
**Cut any Length**  
**JNO. J. GARDSHORE**  
8 Front Street, West - Toronto

**VOLUME IV OF THE CANADIAN HOLSTEIN-FRIESIAN YEAR BOOK**  
Will be ready about October 20th. Price \$1.00 per copy.  
Apply to W. A. CLEMONS, Secretary ST. GEORGE, ONT.

# FARM AND DAIRY

AND RURAL HOME  
PUBLISHED EVERY THURSDAY

**SUBSCRIPTION PRICE, \$1.00 a year.** Great Britain, \$1.20 a year. For all countries, except Canada and Great Britain, add \$20 for postage.  
**ADVERTISING RATES, 12 cents a line flat, \$1.68 an inch an insertion. One page 48 inches, one column 12 inches. Copy received up to Saturday preceding the following week's issue.**

**UNITED STATES REPRESENTATIVES**  
**STOCKWELL'S SPECIAL AGENCY**  
Chicago Office—People's Gas Building  
New York Office—Tribune Building

**CIRCULATION STATEMENT**  
The paid subscriptions to Farm and Dairy exceed 18,000. The actual circulation of each issue, including 18,000 of the paper sent subscribers who are but slightly in arrears, and sample copies are accepted 18,700 to 19,000 copies. No subscriptions are accepted at less than the full subscription rate.  
I have sworn detailed statements of circulation of the paper, showing its distribution by counties and provinces, which will be mailed free on request.

**OUR GUARANTEE**  
We guarantee that every advertiser in this issue is reliable. We are able to do this because the advertising columns of Farm and Dairy are as carefully edited as the reading columns, and because to protect our readers, we turn away all unscrupulous advertisers. Should any advertiser herein deny subscribers, we will make good the amount of your loss, provided such denial occurs within one month from date of its occurrence, and that we find the facts as so stated. It is a condition of this contract that in writing to us you shall not say "I saw your advertisement in Farm and Dairy."

Rogues shall not say their trade at the expense of our subscribers. We are our friends, through the medium of these columns; but we shall not attempt to adjust trifling disputes between subscribers and honorable business men who advertise, nor pay the debts of honest bankrupts.

## The Rural Publishing Company, Limited PETERBORO, ONT.

"Read not to contradict and to confute, nor to believe and take for granted, but to weigh and consider."—Bacon.

### Professor Reynolds

THE Manitoba Agricultural College has now been under the presidency of Prof. J. B. Reynolds for one month. In his new charge, Prof. Reynolds found all the physical equipment necessary to a great educational institution but lacking sadly in the spirit and its purpose which constitute the real worth of any college. It is too soon yet to expect manifestations of new life at the Manitoba Agricultural College, but those of us who know Prof. Reynolds best, are confident that already foundations have been laid for making that college a more potent force in Manitoba agriculture.

In Prof. Reynolds, Manitoba has secured a man of sterling worth. For years he has been a careful student of rural conditions. As a practical, successful farmer, he has been in closer touch with the actual problems of the farm than are most college men, and as a leader of an institution for young men, he possesses the supreme qualification of being a Christian gentleman. In congratulating Manitoba anew on its choice of a head for its college, Farm and Dairy takes this opportunity of expressing our appreciation of the character and worth of our friend, Prof. J. B. Reynolds.

### Why Not Crop Rotations?

DURING the year 1914, the Commission of Conservation made investigations in Canada to determine the proportion of crops that are following a systematic rotation of crops. The results recently published are, to say the least, startling. Of the 100 farmers visited on Prince Edward Island, only one is reported as really following a systematic rotation. In Nova Scotia there were nine, in New Brunswick 19, and in Quebec 200 farms visited, and on these, the survey reports, there are none following a short

rotation, and the plan followed by the average farmer is to leave the land under hay and pasture for from six to eight years, when it would be broken up and again seeded to grass and clover. In Ontario, the banner agricultural province, 200 farmers were visited, and of these only eight are following a rotation that can be called systematic. In the prairie provinces, a rotation of crops is practically unknown.

This showing is not an encouraging one. Climatic conditions, we know, often make the following of an iron-bound rotation impossible and inadvisable. The very best farmers of the land, however, all have a fixed rotation to act as a general guide, and they keep as near to it as conditions will permit. Theory and practice prove that a well planned rotation increases yields and decreases expenses per unit of production. Then why are more of our farmers not practicing a rotation of crops? Frankly, we do not know.

### The Commission Appointed

A ROYAL Commission to enquire into agricultural conditions has been appointed. The duties of the Commission will be to take stock of Canada's natural resources and to investigate and report upon such problems as those of rail and water transportation and marketing, immigration, increased production, the placing of soldiers after the war, cooperative systems, farm credits, unemployment, and similar matters. Senator Loughheed will be chairman of the new Commission. With him are affiliated J. B. Rowland, Montreal; Wm. Smith, M.P., Columbus; Dr. J. G. Rutherford, formerly Veterinary Director-General and now associated with the Canadian Pacific Railway Company; J. C. Waters, president of the Trades and Labor Council; Wm. Farrell, Victoria; E. A. Hopkins, Moose Jaw; J. W. Flavell, Toronto, and Senator W. B. Ross of Nova Scotia. W. J. Black, formerly president of the Manitoba Agricultural College, has been appointed secretary of the Commission.

The duties of this Commission will be heavy and some phases of the work require immediate and energetic attention. The transportation problem, for instance, is already pressing for solution, as the advantages of a large crop are being almost altogether lost to the farmers of Canada through the exorbitant charges for ocean transportation, charges that have been multiplied several times since the outbreak of the war. If we would make a criticism of the constitution of the Commission, it would be that its powers are too wide, that it is required to cover too much ground. This difficulty may be overcome in such measure by the appointment of sub-committees, but even with these committees, each with its special work to do, the committee may be a most unwieldy body. In fact, it seems to have assumed a good portion of the duties which properly belong to Parliament itself. If it performs well even a part of its duties, this Commission will more than justify its existence.

### The Personnel of the Commission

FROM the farmers' standpoint the personnel of the Commission is disappointing. The Commission, we understand, was appointed primarily to investigate conditions affecting agriculture. Farmers, therefore, are the people most inadequately represented on the Commission. For several weeks we have been pointing out in Farm and Dairy that the work of this Commission could not command the confidence of the organized farmers of Canada unless their wishes were consulted in the selection of the Commissioners. These suggestions were altogether ignored. Among the eastern men on the Commission, Wm. Smith, the Conservative member for South Ontario, is the only one who is in any real

sense a farmer, but he is not connected with any of the great farmers' organizations of the land. In fact the only one who has any claim as a representative of the organized farmers is E. A. Hopkins, of Moose J.W., who is a one-time president of the Saskatchewan Grain Growers' Association and is now Honorary President, but who has not been active in the work for several years. Moreover, the selection of Mr. Hopkins was made without consulting the men he is supposed to represent. In short, the farmers' organizations of Canada are not represented at all by men of their own choosing.

At the same time the financial, transportation and labor interests are all represented by men of whom they would approve. J. W. Flavell's relationships with railway, banking and packing interests are well known. Dr. Rutherford is an employee of the Canadian Pacific Railway. Senator Ross is largely interested in a steel corporation, and his connection with foreign railway ventures suggest where his sympathies would be in any difference of opinion that might arise between the farming and the railroad interests. In fact, the transportation interests seem to be exceptionally well represented. Labor, too, because of their superior organization, got a representative after their own heart on the Commission in Mr. J. C. Waters. The great majority of the Commission are certainly not in sympathy with the farmer nor are they qualified to deal sympathetically with his peculiar problems.

The failure of farmers to get adequate representation on this Commission should cause all of us to ask ourselves seriously, why it is that the opinion of the independent farmers' organizations of the country, almost 75,000 strong, apparently counted for nothing in the selection of this Commission. We believe the great lesson to be learned from this incident is the necessity of closer and stronger organization among all who live on the farm.

### A Free Fair

KANSAS, the land of big wheat crops and automobile owning wheat farmers, has just given the first free fair on record; or perhaps it would be safer to say, the first large free fair on record. Over 175,000 people attended the fair. Not one of them paid an admission fee. There were no tiresome waits for tickets at all. There were no heated discussions as to whether Johnnie or Jessie should be classed as child or adult and pay for their tickets accordingly. The usual booming "Please buy your tickets here," was nowhere heard. "Everybody was right in the fair held at Topeka, Kansas, a year ago," said one of the managers. "It was so successful was the fair that its managers are so confident that in 10 years, all of the great fair of the continent will be on the free-entrance basis."

The promoters of the free fair idea argue that a fair is an educational institution, and should be free to the public, even as our schools are free. It so happens that the Kansas law gives permission to counties to levy a tax of one-quarter cent on the dollar to support the county fair. The county of LeFlore has just levied \$50,000 on the dollar to support the fair at Topeka. The sale of stall permits, and so forth, met the rest of the expenses. If the free fair is as desirable as the managers of this one think it is, the day may be near when large fairs will not be a burden when fair day comes, but rather not so far as getting them paid wickets is concerned.

Peter McArthur is contemplating the plan that might be derived from the ownership of a traction engine—the satisfaction of pushing mobiles into the ditch. We all know just what Peter feels about it.

### Studies in Almost All Abortions

Dr. W. L. Williams  
B REEDERS and doctors who frequently inquire where the cow has been lately after aborting a calf, are not aware of the fact that the calf is often found dead, or that the cow has been seen to be in the act of eating her calf. This is a fact which is not generally known, and which is of great importance in the study of abortion in cattle. The fact that the calf is often found dead, or that the cow has been seen to be in the act of eating her calf, is a fact which is of great importance in the study of abortion in cattle. The fact that the calf is often found dead, or that the cow has been seen to be in the act of eating her calf, is a fact which is of great importance in the study of abortion in cattle.

The prevalence of abortion in cattle has also been mentioned in the article elsewhere. So far as is known, abortion is not caused by post-mortem examination of the calf. The prevalence of abortion in cattle has also been mentioned in the article elsewhere. So far as is known, abortion is not caused by post-mortem examination of the calf.

The prevalence of abortion in cattle has also been mentioned in the article elsewhere. So far as is known, abortion is not caused by post-mortem examination of the calf.

The prevalence of abortion in cattle has also been mentioned in the article elsewhere. So far as is known, abortion is not caused by post-mortem examination of the calf.

Dr. Williams is a veterinarian who has been in the practice of his profession for many years. His article and illustrations are from a study of the conditions which are usually associated with abortion in cattle.

## Studies in Contagious Abortion.—No. 1

Almost All Abortions are Contagious. Is the Disease Present in All Herds?

Dr. W. L. Williams, Professor of Surgery, Cornell University, N. Y.

**B**REEDERS and dairymen in seeking advice regarding contagious abortion frequently inquire whether in a given herd it is contagious, or whether it may be due to accident or to the food, such as ensilage. In all cases recorded, so far as we know, where the cow has been killed immediately after aborting and post-mortem examination made, the abortion was clearly due to contagion. No case of contagious abortion from the food so far as we have seen recorded, has been proved by post-mortem examination. Bad food and bad feeding may lower the resistance of the animal and render abortion from contagion more probable. Under these conditions we believe it prudent to regard all abortions in cattle, whether occurring singly or in groups, as contagious, unless otherwise proved.

Abortion is most often seen from the fifth to the seventh month. Occurring earlier it often escapes observation and is classed as sterility. Occurring after the seventh month, it is frequently classed as premature birth.

So far as investigations by post-mortem examinations have led, it appears that abortion in cows is at least practically, if not technically, always accompanied by the presence of the "exudate of contagious abortion," with abortion bacilli in the space between the uterus and the afterbirth.

### The Prevalence of the Germ

The organism of contagious abortion has also been recognized in the milk, and we believe it may exist in the digestive tract, in the vagina, and elsewhere. So far as has been shown by post-mortem examination, the organism does not cause abortion when located elsewhere than in the uterus. Always the infection in the uterus does not always cause abortion. If very severe before breeding, it may prevent impregnation—may cause sterility. If less severe, it may cause abortion at any time during pregnancy, or the calf may be expelled alive and more or less diseased at a premature time. With extensive infection in the uterus, the cow may carry her calf full term and have retained afterbirth. Accordingly, abortion, premature birth, retained afterbirth, and sterility are regarded by us as largely identical, generally due to a common cause, the infection of contagious abortion. We must distinguish between an abortion (the death and expulsion of immature young) due to contagious abortion. The infection, the organism of abortion, may exist in the animal and may cause abortion, premature birth, retained afterbirth or sterility, or may cause no recognizable disease of loss, but its presence may still act as a menace, and later become more active or may reach a more vulnerable spot (the cavity of the uterus) and then cause serious harm.

The prevalence of the infection of contagious abortion is variously estimated, according to the symptoms accepted by the individual as indicative of its presence. If measured by observed actual abortions, large herds of more than 25 animals are but rarely free if the observations are made for three or four years. If we add to the abortions as equal evidences of the presence of the infection the premature births, retained after-

births, and a large proportion of the cases of sterility nearly all herds, of as many as five cows exhibit annual proof of the presence of contagion.

The variations in intensity lead to the belief in one case that the infection has not been eradicated or has died out of been cur'd in a herd. In other cases a sudden increase in intensity leads the owner to believe it has been introduced from another herd. Probably it is at times in the popular sense that a more virulent strain of the same species of organism has been brought in, which then causes greater loss.

### The Origin of the Infection

The control of abortion must be based upon our knowledge or belief regarding the origin of the infection and the manner by which it reaches the uterus. Thus far, the multiplication of the organism has been recognized as occurring naturally, at least chiefly, in the uterus and that this is the essential source of supply for the infection. The new-born calf may, and according to the agglutination test apparently does, sometimes get the infection in its mother's milk. Possibly in some cases these bacilli in the milk of the cow play an important part in the white scours of calves. At a later date the infection, escaping from the uterus, may be transferred to the vulva of a neighboring cow, and thence to the uterus. The infection may be transferred by the bull.

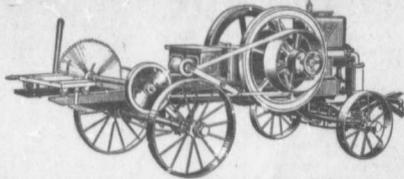
As stated above, so far as we know, the infection must have entered the uterus in order to cause abortion, premature birth, or retained placenta, and must have invaded the genital tract to cause sterility. In the control of these it is of primary importance to disinfect as far as possible the highly infected vagina and uterus, partly in order to restore the breeding powers of the individual and partly to minimize the amount of infectious material, which may be discharged and endanger other cattle. At about 30 days after impregnation, the cervical canal (the mouth of the womb) becomes closed by a firm seal, leaving a sealed cavity between uterus and chorion (afterbirth). We believe that the infection enters the uterine cavity prior to impregnation and the formation of this seal. Most people believe that the infection may also enter the uterus from the vagina through the cervical canal after the uterine seal has formed, or from the digestive tract through the blood stream and the walls of the uterus.

### Condition of Root Crops

**T**HE condition of root crops at September 30, measured against a standard of 100 as representing a full crop, for all Canada 73 for potatoes, 85 for turnips, 87 for manure, carrots and sugar beets, 83 for fodder corn, and 88 for alfalfa. These figures are below those of September 30 last year for potatoes, but are about equal in the case of other crops. Owing to the heavy rains, the potato crop this year will apparently turn out to be poor, especially as compared with last year's splendid showing. In New Brunswick and Nova Scotia the condition of potatoes is only 68 and 69 and in Ontario it is as low as 54.—Census and Statistics Office, Ottawa.

The Leeds Cows Plowmen's Association will hold its annual plowing match on Tuesday, November 2nd.

Behind most kicky cows is the boss who also has the kicking habit, and if he kicks first can he complain if he gets kicked back again?



## Look Well to the Power End of Your Sawing Rig

No part of a wood sawing rig should be more carefully scrutinized than the engine. It is the engine you must rely on to keep the outfit working.

Cold weather does not affect the steady, smooth running qualities of the Alpha. This is a great advantage as most of your wood sawing will be done during cold weather.

The carburetor and ignition system are entirely free from complicated parts. When you start your Alpha in the morning you can rely on it plugging away steadily all day. There is nothing to fuss or tinker with—not even batteries. The perfect control of the sensitive Alpha governor instantly regulates the engine to the varying loads that are always encountered in sawing wood. This feature and the great reserve power of the engine will keep the saw going steadily through big or little wood.

The above illustration shows one of our special steel frame mounted sawing outfits. Let us know what your requirements are and we will be glad to quote you prices and send description of a rig such as you wish.

## DE LAVAL DAIRY SUPPLY CO., LTD.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA  
Sole distributors in Canada of the famous De Laval Cream Separators and Alpha Gas Engines. Manufacturers of Ideal Green Feed Silos.

Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER  
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## Thirty-Six Highest Awards To International Harvester Machines

**T**HE International Jury of Awards, at San Francisco Exposition, gave to the International Harvester exhibit thirty-six highest awards covering not only the full line of harvesting, haying and corn machines and binder twine, including Deering and McCormick, but also the newer lines—the oil engines and tractors, manure spreaders, tillage implements, farm wagons, corn planters, corn cultivators, feed grinders, and seeding machines.

This is a world's record. Never before were so many highest awards given to any one exhibition of farm machines at any World's Fair.

In 1851 the first reaper was exhibited at the World's Fair in London, and there received the Council Medal. Since 1851 it has been the Company's policy to exhibit and demonstrate its machines wherever the opportunity was offered.

The exhibit at San Francisco in 1915 occupies 26,721 square feet of space, by far the most complete exhibit of its kind ever made. The thirty-six highest awards given to this exhibit constitute a splendid mark of approval for the good judgment of the hundreds of thousands of farmers who believe International Harvester machines to be the best of world affairs.

## International Harvester Company of Canada, Ltd.

BRANCH HOUSES

All Branches, Calgary, Edmonton, Estevan, Regina, Saskatoon, St. John, Winnipeg, Yorkton  
St. Boniface, Ottawa, Quebec, Sarnia, St. Catharines, London, Montreal, St. John's, Toronto, Vancouver, Victoria





**Big Game Districts are Conveniently Reached by Canadian Pacific Railway**

Canada's most famous hunting grounds are easily reached by Canadian Pacific Railway. Year after year organized hunting parties visit these localities and practically always take the limit.

Small game and wild fowl are plentiful, while the fishing is unsurpassed. Particulars from Canadian Pacific Ticket Agents, or write M. G. Murphy, District Passenger Agent, Toronto, Ont.

**FREE** containing descriptive list of rural books for farmers, stock raisers, poultrymen, etc. Write for Book Dept., Farm and Dairy

Send for the 1915-16 Edition of our **FUR STYLE BOOK**  
34 pages, illustrated, of beautiful fur coats and garments for men, women and children. **IT IS FREE.** Address: **JOHN HALLAM, LIMITED** Room 176, Hallam Bldg., TORONTO

**Labour Troubles, Mr. Farmer?**

Then Write For This **FREE Book**

Would you be willing to hire a "fellow" like this if you saw his advertisement?

**JOB WANTED**—Willing worker, no board, no time off for meals or holidays; will saw wood, thresh, turn churn, pump water, and all work of that nature. Wages about \$5 a month, working 16 hours a day; permanent job. Apply Empire "STA-RITE" Farm Engine.

Wise farmers are solving their labor problems by using gasoline power wherever they possibly can. With a farm engine you can cut down the number of men on your farm—you have help that doesn't demand more money or quit in the busy season; there is no cost for board and no kicking about long hours.

You have no trouble with an Empire "STA-RITE" Farm Engine. Most gasoline engines require a qualified engineer to keep them running. The Empire "STA-RITE" is the simplest form of power generation by gasoline, suited to the farmer's limited knowledge of machinery.

The Empire "STA-RITE" is easy to start and stays right without a lot of delicate adjustments. You won't realize fully all its means to end in four words: **simple, strong, safe, and sure.** You read the Empire "STA-RITE" Farm Engine Book. This is why we want you to cut out the coupon below right now, fill it at once and mail to:

**The Empire Cream Separator Co. of Canada, Limited**  
Toronto and Winnipeg



Without obligation to me please send the Empire "STA-RITE" Farm Engine Book.

(Name) \_\_\_\_\_  
(Address) \_\_\_\_\_

Mention Farm and Dairy when writing.

**The Upward Look**

**Travel Thoughts—No. 5**

**"WEEPING may endure for a night, but joy cometh in the morning."**—Psalm 30:5.

Early one afternoon, all the passengers in the coaches were notified that an observation car was to be put on to the train, as we were soon to pass through the Royal Gorge. These observation cars are without a roof or usual sides, so that from them one has an unobstructed view above, behind and on either hand.

For hours we went through that wonderful gorge; at the bottom raged and roared the narrow, muddy, turbulent waters of the Arkansas river, on both sides, towered gigantic cliffs, three-quarters of a mile high, many-colored, with clinging flowers and bushes, springing up in the crevices. In many, many places these cliffs are only a few feet high. In spite of the bright, vivid, ever-changing coloring of rock and flowers, the impression of the whole, as we passed on between the towering, craggy, cragging cliffs, was gloomy and depressing.

But after that, we came out into a beautiful sunlit valley in the Rocky Mountains, nestling in among its circle of snow-covered peaks. There, clear and distinct, was the Cross, its pure white outlines on the dark background of rock. Snow remains in that shape the year round.

Over and over again, in these months of travel has this happened. Out of fearsome, awesome gorges or canyons did we pass into bright, sunny stretches or plains.

Over and over again in our lives, has God called, and over and over again He will call us, to pass through the dark and sombre gorges and canyons of sorrows and trials, but over and over again He will lead us, often by tortuous and winding ways, out into the peaceful and happy valleys of joy and peace. In the darkest and saddest places, we must confidently look for the glimmering of the light in the way, through which He will guide us. No matter how long, and dark, and painful the night, the morning must break, the daylight come. So God never lets the sorrow be too great, but with it or following it comes the joy, whether for people or for nations.—I. H. N.

**Home-made Water System**

MRS. W. R. Johnson, a clever little woman with an equally clever husband who believes in saving his wife's time, energy, and health, has solved the problem of how to have hot water in the ranch house kitchen. The plan is described by Miss Oberlin of the Colorado Agricultural College. The cost was very little, as Mr. Johnson did the work himself.

A shelf was built in the corner of the kitchen just back of the stove and a whisky barrel, which cost one dollar, was placed on the shelf. A water front was arranged in the stove with two pipes into the barrel, one through the bottom, the other into the side six inches from the bottom. One faucet in the front of the barrel supplies hot water for the kitchen, while another in the bathroom, located between the kitchen and the bedroom, makes it easily available for toilet purposes. Some day the bathroom is to have a tub; at present the largest wash tub is carried in and placed under the faucet in the bathroom whenever a tub bath is desired.

The barrel is filled with water every morning, and the fire necessary to cook breakfast and dinner heats a supply of water sufficient for the day.

**There's a Subtle Charm about the delicious flavour of**

**"SATARA"** B106

**This flavour is unique and never found in cheap, ordinary teas. Let us mail you a sample. Black, Mixed or Green.**

**Shippers and Trappers**  
We Buy for Cash and Pay Highest Prices for all kinds of **FURS**  
Send today for our Free Price List and let us prove to you that we actually pay more than any other house for Fine Fox, Mink, Marten, Rat, Lynx, Wolf and all other Furs, Hides and Ginseng.  
We offer you best facilities in America for handling all your furs. Send for Free Price List and Shippers' Tags. No commission charged.  
**ROGERS FUR COMPANY, Dept. 439 St. Louis, Mo.**

**CREAM, MILK, EGGS**  
Sweet Pure Fresh  
We are ready to handle larger quantities of each. Write us for prices. Cans and crates supplied.  
**THE PEOPLE'S DAIRY CO., TORONTO**

**ACORN CORRUGATED IRON**  
No expense for up-keep on barns and outbuildings covered with Acorn Iron and Preston safe-lock Shingles. No danger of fire and lightning.

"Better Buildings"—12 page book tells all about barn building with metal. FREE to Farmers.

The Metal Shingle & Siding Co., Limited **PRESTON**

**CHURNS**  
Are Made Hygienically Clean with Little Labor by **Old Dutch Cleanser**  
Large Sifter Can, with Full Directions, 10c

**Be Convinced before you pay a cent.**



If you only know how quickly the 1900 Gravity Washer disposes of the week's wash, you would never again allow your clothes to be washed by hand. Clothes washed by a 1900 Gravity Washer, saves you a long, long, long day's labor. You save your hands health and time or money, you perhaps say to have someone else do the work. Try it anyway, for 30 days. If not only would it free you the freight—and I ask not a cent from you until you are convinced as well that you need this machine. If you shouldn't agree with me, send it back. My books are free too. Write for it.

Address me personally,  
**J. C. MORRIS, Manager,**  
1-50 WASHIER COMPANY  
357 Yonge Street, Toronto

**Do you want to earn \$10 a week or more in your own home?**

Reliable persons will be furnished with profitable, all-year-round employment on Auto-Knitting Machines, \$10 per week readily earned. We teach you at home, distance is no hindrance. Write for particulars, rates of pay, send ac. stamp.

**AUTO-KNITTER HOSIERY CO.**  
Dept. 751 227 Collins St., Toronto  
(Assn of Leicester, England)

**TRAPPERS—FREE**  
FOR NEWS, published monthly, 15c per year, tells all about raw furs, trapping, hunting, fishing, fur farming, hunting dogs, woodcraft, guns, game, market prices and everything of interest to the outdoor man. Lots of good stories by best writers, and fine illustrations. Send 15c for 3 months' trial subscription and get four valuable illustrations of the Trapper's Guide.  
FOR NEWS, 71 W. 23rd STREET, NEW YORK, ROOM 170

**Ontario Women's Institutes' Patriotic Work**  
by Geo. A. Putman, Supt. of Institutes for Ontario.

WHEN the call came about a year ago for the women of Canada to assist along patriotic lines, it was a comparatively easy matter to reach the women of the cities and larger towns through the National Council of Women, Daughters of the Empire and other organizations which are to be found in the larger centres. About the only way and it proved a very effective method, to reach the women of rural Ontario was through the Women's Institutes. It is the only organization representing all classes and sects throughout the province. Their response to the first call for assistance in providing a hospital ship was generous. Money required for this particular work was over-subscribed in a few days, then the Women's Institute members began to raise funds in various ways to assist the Red Cross, Belgian Relief, Local Relief, etc. Their donations in cash up to the present time, total at least forty thousand dollars (\$40,000). Their liberality and self-sacrifice is best illustrated, however, in the great quantity of supplies provided for the soldiers and other patriotic purposes. It is impossible to get complete statistics, but a conservative estimate would place the value of such donations—socks, shirts, Balalacla caps, scarfs, shets, pillows, etc., at approximately as much as has been donated in cash. When local resources have been exhausted, the women have asked the authorities to provide yarn and cloth so that their willing fingers may be kept busy.

The Women's Institutes up to the time of the war devoted much time to the discussion of food values, care and feeding of children, beautifying of the home, community improvement, the school, etc., but since the war began, possibly 80 per cent of their energy has been devoted to patriotic work—a standing monument to the self-sacrifice and patriotism of these women who have, for the past 10 years been asking themselves what

can they, as an organization, do for the betterment of home and community conditions and for the relief of distress. Their contributions have been large towards recent national undertakings, but through it all they have not neglected to look after the needy in their own districts. The following will serve as illustrations of what in-



**Enthusiastic Red Cross Workers Who Deserve Much Credit.**  
The women illustrated above, show members of the Patriotic League of the Women's Institute of Aurora, Ont., busily engaged in Red Cross work. They have accomplished a great deal during the past year, the following being some of the results of their labors: 108 hospital night-shirts; 113 pairs white; 813 yards bandages; 293 pairs socks; 154 shets; 110 pillow cases; 16,430 mouth wipes; 120 large dressings; 150 small dressings; 138 white fur and lam; \$70 cash to Red Cross Society; \$5 to Major Kilgour for sand bags. The total amount of money raised by this League since August 31, 1914 amounts to \$1,600.26. This includes the proceeds of a very successful Field Day held September 18th, which were \$412.37.

dividual societies have done here and there over Ontario:  
Brampton Branch, Peel county, donated the sum of \$1,960.00 for patriotic purposes, made up as follows:  
Red Cross: Cash ..... \$600.00  
Red Cross: Goods ..... 700.00  
Hospital Ship: Cash ..... 100.00  
Belgian Relief: Cash ..... 525.00  
Local Relief: Cash ..... 10.00

Goods to Toronto and other centres ..... 20.00  
Tillsburg Branch, Oxford South, donated \$3,600.00, as follows:  
Red Cross: Cash ..... \$ 6.00  
Red Cross: Goods (3 bbls. preserved fruit) ..... 47.00  
Belgian Relief: Cash ..... 252.65  
Belgian Relief: Clothing ..... 2,084.30  
Belgian Relief: Food ..... 132.50  
Local Relief: Clothing and Food ..... 30.00  
Schools Furnished Lunch Room 16.00

Supplies for the Red Cross and Belgian Relief consisted of shirts, quilts, socks, scarfs, handkerchiefs, bandages, shets, pillow cases, towels, bed socks, sleeping caps, sweaters, coats, holdalls, undershirts, clothing for Belgian children, preserved fruit jelly, condensed milk, beans, oatmeal, rice, tea, dried fruit, etc. The money and supplies are secured by the local Institute in various ways. Besides securing funds by contributions from the members, much is obtained from the proceeds of patriotic concerts, managed by the local society. Some Institutes hold weekly sewing bees for the purpose of making articles to forward to the soldiers and needy Belgians. Often an afternoon tea is held after the sewing has been completed, and the proceeds are donated to relief work. Other Institutes have organized weekly bazaars, which are well patronized by the general public, and considerable money has been secured in this way. In many localities the Women's Institutes have undertaken to organize the district and take charge of the canvass for funds for relief work of all kinds. This scheme has been very successful where tried, much money and supplies having been secured.

Other methods have been adopted by Institute workers to secure supplies and funds to assist our country and soldiers at this critical time, but those mentioned will illustrate the resourcefulness, the patriotism, and philanthropic spirit of the members of the Women's Institutes in their endeavor to do their part in assisting their country and relieving the wants of the destitute women and children of allied Belgium.  
A practical effective work of the Institutes in recent years in the interests of the home and community life has drawn forth favorable comment from the leaders of the nation, but it is their patriotic work of the past year that will be a lasting monument to the loyalty and self-sacrifice of Ontario's best women.

When dusting, try dipping the cloth in coal oil first and allow to evaporate

**"CHILDREN. YOU MUST GET RIGHT UP—**

It will be nice and warm here in a few minutes."

Perfection Oil Heaters make a room comfortable quickly, save health and save money. Easily carried from room to room.

For best results use **Royalite Oil**—the economical fuel.

THE IMPERIAL OIL COMPANY Limited  
BRANCHES IN ALL CITIES



**PERFECTION**  
SMOKELESS OIL HEATERS  
MADE IN CANADA



**Ready to**

Whether she will profit or not is no matter of feeding. You, your own hands, pullets lay through Decide NOW. For ter Profit.

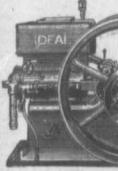
Supply your pullets with foods contain their get on in summer. Give the Shur-Gain Beef-Sour the place of the worms they miss quarters. They must protein.

Send us the complete poultry book, also success in poultry keeping.

**Gunns BEEF-SOUR**

**GUNNS LIMITED**  
21 Gunns Road, West  
Send Poultry Book

**GASOLINE ENGINE**  
11 to 20 H.P.  
Stationary Mounted



**WINDMILL**  
Grain Grinders, Water, New Frames, Pumps.  
**GOOD, SHAPLEY & M**  
Bradford Windmill Co.

**BULB**

Nothing that cheers the during the winter months.  
We have All Varieties. Especially Try some of the  
TULIPS—15c to 25c  
HYACINTHS—35c  
Send for Bulb Catalog

**GEO. KEITH**  
Seed Merchant  
124 King St. East

**MAKE UP A MOT**

At a small cost you can be fully equipped. No special tools and free catalog. Write for it. Satisfaction guaranteed. Second-hand, SHAW MANUFACTURING Dept. 128, Guelph

**Peck, Kerr & M**

Barristers, Solicitors  
415 Water St., Pe  
A. Peck F. D. Kerr

20.00  
of South,  
\$ 6.00  
47.00  
293.88  
2,096.50  
132.50  
30.00  
m 10.00



**Ready to lay**

Whether she will make a profit or not is now a matter of feeding. You have it in your own hands to make your pullets lay through the winter. Decide NOW. Plan for Winter Flocks.

Supply your pullets in winter with foods containing the protein they get on free range in summer. Give them GUNNS Shur-Gain Beef-Scrap to take the place of the bugs and worms they miss in winter quarters. They must have the protein.

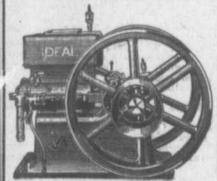
Send us the coupon for our poultry book, a clear guide to success in poultry keeping. Free.

**Gunns Shur-Gain BEEF-SCRAP**

GUNNS LIMITED  
22 Gunns Road, West Toronto.  
Send Poultry Book Free.

**GASOLINE ENGINES**

1 1/2 to 20 H.P.  
Stationary Mounted and Tractor



**WINDMILLS**

Grain Grinders, Water Boxes, Steel Saw Frames, Pumps, Tanks, Etc.

**GOLD, SHAPLEY & MUIR CO., LTD.**

Brasserie Winnipeg Regina Calgary

Nothing that cheers the Home more during the winter months than choice

**BULBS**

Where All Varieties. Easy to Grow—Low Price—Try some this Fall!  
TULIPS—15c to 35c doz.  
HYACINTHS—35c to 90c doz.  
Send for Full Catalogue.

**GOO. KEITH & SONS**  
184 King St. East - TORONTO

**MAKE YOUR BIKE A MOTORCYCLE**

At a small cost by using our Attachable Motor for your bicycle. No special tools required. Send Money for our FREE Book. See how easy it is to make your bicycle into a motor cycle. Also see how to make a motor cycle into a bicycle. Motorcycles, all makes, new and second hand, for sale and repair.

SHAW MANUFACTURING CO.  
Dept. 138, Galesburg, Kan., U.S.A.

**Peck, Kerr & McElderry**

Barristers, Solicitors, etc.  
415 Water St., Peterborough  
E. A. Peck F. D. Kerr V. J. McElderry

**The Makers' Corner**

Butter and Cheese Makers are invited to send contributions to this department to ask questions on matters relating to cheese making and to suggest subjects for discussion.

**Mould in Butter**

"MouldINESS in Butter" was recently studied by the United States Department of Agriculture, and the results published recently:

Mould may cause deterioration in butter either by developing on the wrapper and spoiling the appearance of a sample, or by growing in the butter itself and producing thereby such changes in the composition as to make the butter unsaleable. The nature and conditions of growth of such moulds were studied; it was found that imperfectly washed butter, containing a high percentage of casein, provided the most favorable medium of growth and that a high water content less encouraged the development of mould as did storage in very damp cellars; but practically all risks of damage from this cause were eliminated by the presence of 2.5 to 3 per cent. of salt in the butter, which corresponds to the use of 12 to 15 per cent. brine.

**Print Butter Shrinkage**

The Cornell Experiment Station has been making some interesting investigations on the shrinkage of print butter and has issued the following summary as a result of the work:

1. The variation of pore space, which ranges from .60 of 1 per cent. to over 6 per cent. in freshly made butter, is important in the printing process.
2. Print butter gradually loses weight in storage.
3. The rate of loss depends principally on the temperature and humidity of the storage room.
4. If the temperature is kept down to 50 degs. F. and the humidity is kept above 90 per cent. at least a month, and perhaps much longer, will be required for the shrinkage to approximate the limit set by the New York law, provided the prints are packed in boxes.
5. If the temperature is 60 degrees F. or above, and the humidity is 85 per cent. or below, the shrinkage will approximate the limit set by law in a space of 10 days to two weeks, even if the prints are packed in boxes.
6. The degree of shrinkage is not inversely proportional to the weight of the wrapper used, as is generally supposed.
7. The degree of shrinkage decreases to a considerable extent when the prints are packed in cartons. The other two methods of packing, however—leaving the prints dry after placing them in boxes, or sprinkling them with water—produce about the same effect on the degree of shrinkage.
8. In the average small store refrigerator, the loss will approximate the limit set by the law in a space of ten days when the prints are piled loosely on the shelves.

**Eggs as a Sideline**

Why not make the cheese factories and creameries of the land also the central egg depots? Several factories in Canada have already taken up eggs as a sideline, and most of them are finding it a profitable one. A great difficulty in the handling of eggs at a cheese factory, however, is that the maker is usually too busy when the eggs are brought in in the morning to count

them. Receiving the milk is job enough for one man. Perhaps this factor explains more than any other why so few factories, which seem to be the logical centres for their community, have not taken up this line of work.

Perhaps the difficulty might be solved in this way: Why should not each patron have a number and when he brings in his milk in the morning in a box which bears his number, the maker would only need to put down the number of dozen opposite that patron's number on a card tacked on the wall of the receiving stand. It would be necessary to insist that round dozens of eggs only be sent in. In the afternoon, when there is more time available, the eggs could be counted, crated according to color and size, and shipped. At first, it might be necessary to grade almost every day to eliminate bad eggs. Patrons would soon learn that it is useless to deliver bad eggs, and thereafter only an occasional grading would be necessary.

The chances for most profit in the egg handling sideline is where the shipping station is near, and eggs could be sent daily to the city market. There are always fancy crockers who would pay a fancy price for fresh eggs received daily, and the trade might be made an advantage to both patron and maker.—G. F.

**Hot Water in Creamery\***

A CREAMERY that uses a steam engine and permits exhaust steam to escape unused is wasting a valuable by-product. Exhaust steam can be used successfully for heating milk, cream, boiler-feed water, wash water and the building. The heating of boiler feed water and wash water only will be considered in this circular.

In the majority of small creameries the boiler is fed by means of an injector, but this is not an economical apparatus in this work, because it requires live steam for its operation and cannot handle hot water. For every 10 degrees F. that water is heated before approximately one per cent less fuel is required to generate a given amount of steam, and for each 10 degrees F. increase in feed water temperature the boiler capacity is increased approximately one per cent. When hot feed water is used a constant pressure on the boiler can be more easily maintained, and there will be an additional saving of fuel, attributable to even firing.

The heating of feed water from a temperature of 60 degrees F. to that of 200 degrees F. by means of exhaust steam will reduce the fuel consumption about 12 per cent., or will reduce a \$500 fuel bill to \$430.

The use of exhaust steam for heating wash water will still further reduce the fuel cost. It is estimated that in a creamery making from 100,000 to 300,000 pounds of butter annually a maximum of 800 gallons of hot water are used daily. It is customary to heat this water with live steam from the boiler. To heat so much water from a temperature of 60 degrees F. to that of 170 degrees F. requires approximately 127 pounds of coal. When the heating is done with exhaust steam the heating of this quantity of 127 pounds of coal a day, or if operated 300 days a year, an annual saving of 38,100 pounds. At \$5 a ton this is worth \$95. In a creamery of this size the heating of the boiler feed water from a temperature of 58 degrees F. to that of 90 degrees F. will effect a further saving of approximately \$100 annually. An equipment, consisting of a 20 gallon power heater, a hot water storage tank of 220 gallons capacity, and a boiler feed pump, can be installed for about \$200 and will effect an annual saving of \$196.

\*A circular issued by the Dairy Division, U.S. Dept. of Agriculture.



**Prize butter is made with Windsor Dairy Salt**  
(Made in Canada) 15c

**EGGS, BUTTER Live Poultry**

Bill your shipments to us. Advise us by mail and we will attend to the rest promptly.

Egg Cases and Poultry Coops supplied upon request.

**The DAVIES Co., Ltd.**  
Established 1854 TORONTO, ONT.

**WE WANT— CREAM**

We offer highest prices for churning cream. Write us for quotations.

**SANITARY DAIRY**  
H. W. Heskell, Mgr. ST. CATHARINES

**CREAM**

WE WANT YOURS

Profitable prices and furnish cans

Profitable Prices Promptly Paid

Write us

**BELLEVILLE CREAMERY LTD.**  
BELLEVILLE, Ont.

**Cider Apples Wanted**

We are prepared to pay the highest cash prices for cider apples in our lots. Farmers who have excess sufficient to make up a whole car themselves can arrange with their neighbors for joint shipment.

Write us if you have any to offer.

**BELLEVILLE CIDER & VINEGAR COMPANY**  
Hamilton, Ontario

**Butter Wrappers**

Printed with 250 names, addresses, etc. (uses reply) parchment paper, only \$1.25 (1,000) \$1.75 (5,000) extra of 25c, 75c, 1.00 and 1.50, for 1,000.

**British Whig Publishing Co., Kingston, Ont.**

WHITE AND COLUMBIA WYANDOTTES, LIGHT BRANMS, S.C. WHITE LEGHORNS

Over 30 years a breeder.  
Stock and Eggs for Sale.

Michael K. Boyer, Box 23, Hammonds, N.J.



falling off. Quotations follow: Yearling sheep, \$8 to \$8.25; spring lambs, ewts., \$8.50 to \$9.50; cull lambs, \$5.50 to \$6; light ewes, \$5.50 to \$6.25; heavy sheep and ewes, \$4.25 to \$5.25; culls, \$2.50 to \$3.50.

The hog market has quotations that are satisfactory to the shipper, but to the state of the market is unsatisfactory. The receipts continue to be heavy and packers are reported to be endeavoring to force down the market. Hogs are quoted off as follows: \$9.70 to \$9.95 for choice; light and heavy, \$9.30 to \$9.45; fed and weaned, \$9.50 to \$9.55.

**OUR FARMERS' CLUB**

Correspondence Invited.

**PRINCE EDWARD ISLAND**

**KINGS CO., P.E.I.**  
**MONTAGUE**, Oct. 21.—Potato digging is over and a very poor crop has been gathered. The potatoes are less than half a crop. The growers report that the grain is turning out well to the stock, but a lot of the grain was damaged by the wet weather. Very little shipping has been done yet. Eggs are getting very scarce, and prices are going up. 25c now. Oats, 30c a bush; potatoes, 20c a bush; beans, parsnips and carrots, 60c a bush—G. A. Christie.

**NORFOLK CO., ONT.**

**SIMCOE**, Oct. 20.—Stock of all kinds is in good condition for the winter with abundant pasture. At present time, wheat or wheat is making a fair growth where planted early. Roots are only a fair crop; potatoes almost a failure. Hay, 1st class, second growth, 45¢ to 50¢; straw, 10¢ to 12¢; Apples are a very poor crop; other fruits, such as plums, etc., have been plentiful—F. O. B. Hastings Co., Ont.

**PWELL**, Oct. 21.—Silo filling has been the chief occupation. Corn was badly blown down and very difficult to harvest satisfactorily, but a heavy crop and well earled. A number of new silos were filled this year, and very little husking corn was grown—H. S. T.

**OXFORD CO., ONT.**

**WOODSTOCK**, Oct. 23.—Considerable wet weather, yet, but not as wet as it has been. The farmers are very busy threshing. Billings are being made and many may sales this fall and cattle are selling very high, \$90 to \$100 being the average. There is a strong cattle selling market high also. Not much plowing has been done yet. Turkeys are still in the ground and are a fine crop. Potatoes are a failure, a great many of them being rotting, and a poor market. Beans are a fine good crop. Pork sells at \$9.60 a cwt. Tomatoes were a failure, unless a good crop of early ones and another very many carrots and beets good, but rotting—A. M. McPherson.

**BRITISH COLUMBIA**

**NEW WESTMINSTER DIST., B.C.**

**ORILLIACK**, Oct. 23.—Only two more days until the pleasant shooting season will be in and every old rusty brook in the country will be blazing away at the feathered creatures. Several apple trees in this district are covered with blossoms. In some garden ripe strawberries can still be had—N. C.

**SALE OF GLENHILL AYRSHIRES**

ABOUT 300 admirers of the Ayrshire breed were in attendance at Mr. B. A. Murray's sale at Glenhill Stock Farm, Marlinton, Ont., on Wednesday of last week. The total receipts of the sale amounted to \$4,705, and while not a high average, was very fair when it is taken into consideration that the 52 head sold, a goodly number were calves and yearlings. Some of the best prices were as follows:

Buttercup of Glenhill \$100, sold to D. A. Rose, Marlinton; Sunburst of Glenhill \$130, W. C. Tully, Athol, Que.; White Floss of the Glen, \$100, W. D. Hall, Curvill; Battle of the Glen, \$120, A. A. Bruce, Huntington, Que.; Lily of the Glen, \$120, Cummings, Que.; Lancaster, Ada of Glenhill, \$120, A. Watt, Lancaster; Pearl of the Glen, \$120, A. A. Bruce; Gurnea of the Glen, \$120, Robertson, near Marlinton; Thelma of the Glen, \$145, D. A. McLean, Williamstown; Mollie of the Glen, \$120, MacLennan, Dalkeith; Dalair of the Glen, \$157.50, Wm. McLaughlin; Glenhill Cadara, \$127.50, W. Leitch; Glenhill Echo, \$120, Wm. Leitch; Glenhill Rosebud, \$122.50, A. Watt; Glenhill Victoria, \$120, John Sandilands; White of the Glen, \$120, Scott Fraser, Lancaster; Edith of the Glen, \$105, Albert McGehe, Grest's corner; Twin Bell of the Glen, \$107.50, W. McLean, Northfield; Mabel of the Glen, \$115, A. A. Bruce; Gladys Girl of Glenhill, \$115, W. C. Tully; Glenhill Linnaea, \$125, Stuart Melphour, Marlinton; Glenhill Hazel, \$120, J. F. Annable, Mountieau; Amhull Deas, \$100, Isaiah McEldrie, North Bay; Lizzie Glen's Opinion, \$100, A. Watt; Glenhill Pippin, \$110, Cumming.

**GUERNSEY BULLS**  
 A few choice young animals for sale. **EMF ORANGE** Regs for hatching. Write for prices.  
**R. R. BLACK**  
 Highland View Dairy, Amherst, N.S.

**HOLSTEIN** 19 Bulls, 80 Females. One yearling bull (a dandy), by King Regal 60 day milk records for Canada for a son of 5 years old. His dam is a Grand-daughter of King Regal. Another by a son of Pontiac Korndyke from a 29 lb. dam.  
**R. M. HOLTYR**  
**R. R. A. PORT PERRY, ONT.**

**LAKEVIEW STOCK FARMS, BRONTE, ONT.**  
 Breeders of high-class Holstein-Friesian Cattle, offered for sale a Choice Young Bull, born May 27th, 1915 out of a 28lb. 3-year-old dam and sired by Dutchland the World's champion 577-cold milk cow. Prices and particulars on application.  
**E. F. OSLEB, Prop.** T. A. DAWSON, Mgr.  
 When writing to advertisers mention Farm and Dairy.

**AVONDALE FARM**  
 We have a dozen YOUNG BULLS from our King Pontiac and Woodcrest Friesle bulls—priced extra good ones fit for service.  
**H. LYNN, HERDSMAN,**  
**R. R. No. 3, BROCKVILLE, ONT.**

**RIVERSIDE HOLSTEINS**  
 For sale, Choice Young Bull, sired by King Johanna Pontiac Korndyke, a grand-son of Pontiac Korndyke, and a brother of Pontiac Lady Korndyke, 28.05 butter in 7 days, 106.97 lbs. 30 days—world's record when made. Also females bred to make room.  
**J. W. RICHARDSON**  
**Kingston, Ont.**

**Don't Break Your Back!**  
**Make More Money, Make Barn Cleaning Easy, Save HALF THE Time!**

**This Wonderful New Book Tells How! It's FREE Mail Coupon or Postal NOW for Your Copy**

Cleaning the barn with a wheelbarrow is the dirtiest, most disagreeable and hardest work on the farm. It's a job that's shirked by hired men, boys and owners as often as possible. It's a job that "tries men's souls." It's a task that drags the profession of Farming down to the point where it's next to impossible to keep good help—and almost a sin to keep boys at home.

Here's the old back-breaking way to clean barns—the way that drives clean men away and leaves behind a broken-down, makes farmers with they were in some other business.



**STOP THIS!**

It isn't necessary to wear your life away pushing a dirty wheelbarrow through dirty barn and yard. The New Way—the Dillon Way—makes barn cleaning over any way you a big profit. Read this announcement, then get our book and low factory price—free by mailing coupon or postal today.

Cleaning a barn with a wheelbarrow is back-breaking, heart-aching slavery. Yet, in fair weather and sloopy weather, if must be done. You may skip a day, but you have a double task the next day. And your barn rats, your cows suffer and your profits suffer, if the work isn't done regularly and thoroughly. It's costly, wasteful, disagreeable, behind-the-times, and unnecessary.

**The New Way To Clean Barns Quick**

The New Way—the Dillon Way—takes the hard work out of barn cleaning, makes it easy for even a boy to do the work in a jiffy. It consists of a galvanized steel overhead carrier, mounted on a solid steel track, around corners anywhere in the barn. The tub is raised and lowered by the endless chain leverage principle which raises an 800-pound pull with a 50-pound pull. The carrier runs easily with a slight push—out of the barn, and dumps its load right into the wagon or spreader or on a pile any distance you like, away from the barn.

The Dillon Carrier makes play out of barn cleaning. It cuts the work into less than half. It saves time, preserves all the valuable liquid manure for your land, keeps the barn clean so cows don't lie in filth, don't breathe disease, and milk isn't contaminated. Keeps manure away from dirt—no disagreeable odor, no rotting boards, no weak eyes or lungs. It saves a few of the ways a Dillon Manure Carrier saves you in time and money and adds to your profits. Other ways are told about in our new, fine book which we want to send you free. Mail coupon or just a postal now.

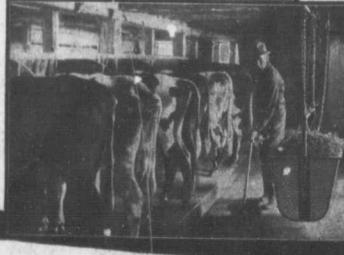
**The Dillon Manure Carrier, Direct From Factory, 60 Days Trial, Freight Paid, Money-Back Guarantee! Get Our Price!**

The Dillon Manure Carrier is made so we can afford to send it to you on the most liberal selling plan ever devised. The tub holds 18 bushels of all steel, every part of it, made too heavily galvanized and simple braced. Raises and lowers with a little pull on the chain. Friction clutch keeps it from coming down too fast. Overhead track made of high carbon steel, yet easy bent cold for curves. Easily hung with our double wheel track makes tub run smoothly and easily. Stay Set Safety Stop Switches prevent accidents and wear fast! Outside Swing Pole and patented Outside Track—features, are exclusive features that place the Dillon far ahead of all others.

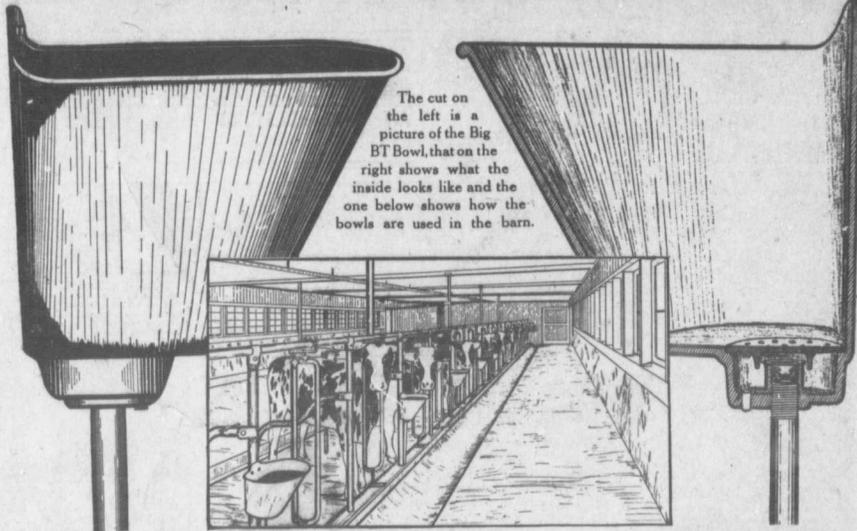
**Get Our Price and New Book Free**

We save you big money on the price by selling direct from factory and guarantee you the best of all money can buy. We have been in the barn hardware business for 25 years, right here in Oshawa and do everything we claim. Get our price and our book—free. We'll tell you what our customers say. Try a Dillon—get it if you can't get it any other way or simply satisfied in every way.

Send coupon or postal now—includes your money—our book and money saving plan. Please mention number of cows you own from the top of the page. Name, Address, City, State, Zip, 219 Mill St., Oshawa, Ont. 210 Mill Street, Oshawa, Ont. Free Coupon For Dillon Manure Carrier Book.



Free Coupon For Dillon Manure Carrier Book.



The cut on the left is a picture of the Big BT Bowl, that on the right shows what the inside looks like and the one below shows how the bowls are used in the barn.

# Let your cows drink in comfort

No humane man will drive his cows out on bitter cold water days, and make them drink from an icy trough or stream.

He will not have them stand, and shiver while trying to gulp down a little of the freezing water, and even shiver after they have been tied up in the barn again, while the water is warming up to the temperature of their bodies.

Aids in the comfort of the cow, he knows that it PAYS to give her better treatment.

No cow will drink much freezing water. And, if she doesn't drink a lot of water, how can she give much milk?

Am' supposing she does take a great quantity at the trough. The low temperature will chill her stomach so that the feed that is in it cannot be digested for an hour or more after watering. The cow will soon get indigestion, or she may get the blues, and there will be a veterinary bill to pay.

## Water Cows with Water Bowls

BT Water Bowls keep a supply of fresh water constantly before the cows, so they can drink just when they want to and take as much as they please. The water is kept warmed up to the temperature of the stable.

The cow requires less feed because her body heat isn't wasted. Then, you are saved the job of driving them out to water and often digging paths for them.

Separate bowls prevent disease spreading in the herd. Whether you are milking a number of cows or keeping a bunch of young stockers, the BT Water Bowls will pay in this way.

We will guarantee to any farmer who is willing to keep an accurate record of the milk production of his cows before and after installing a BT Water Bowl Outfit that the increase in milk production caused by using BT Bowls will pay for them in two months.

## Send for Pamphlet

We want you to find out about the BT Bowl. Learn how it is bound to give satisfaction as long as you will ever need it.

Let us explain how the great depth gives heavy pressure in the Bowl and fills it up as quickly as the cow drinks.

Let us show how the simple valve keeps the pipes from clogging with hay and chaff, and how the bowl can be cleaned in a moment by pulling out the little plug in the bottom.

We want to show you cuts the actual size of the BT Bowl and you can see for yourself how big and strong and simple it is.

The fall is the time to put in your outfit, before the cows have to be tied in the barn. Be ready for the winter time. Look forward to easier barn work and bigger profits from the stock.

Get Our Pamphlet To-day.

## Send This Coupon To-day

MAIL THIS COUPON NOW TO BEATTY BROS. LIMITED,  
2053 HILL STREET, FERGUS, ONT.

Send me your booklet, "Helpful Hints about Watering Stock."

I have ..... Cows

Your name .....

P. O. .... Prov. ....

**Beatty Bros. Limited, 2053 Hill Street, Fergus, Ontario**

BT Galvanized Steel Stalls, Stanchions, Pens, Hog Pens, Steel Horse Stable Fittings, Hay Carriers, Manure and Feed Carriers

BT stands for Best

BT stands for Best



# Water Bowls